
STEVEN J. CONNOR
TECHNICAL MANAGER
AIKEN, SOUTH CAROLINA

EDUCATION: M.S., Physics, Georgia Institute of Technology, 1974
B.S., Physics, "with highest honor," Georgia Institute of Technology, 1973

EXPERIENCE SUMMARY:

Mr. Connor has 34 years of professional experience in scientific, engineering, management, and educational disciplines. He currently serves as a Technical Manager in the Aiken Office and is responsible for overseeing project execution for all Aiken Office projects. The Office project managers report directly to Mr. Connor. As a technical consultant, he also provides government, industrial, and utility clients with services in environmental radiation protection and environmental management. Mr. Connor has specialized skills in radiological transportation risk assessments, National Environmental Policy Act (NEPA) documentation, human health risk assessments, radiological emergency response training, induced current analysis for electrical transmission lines, and radiological support of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response Compensation Act (CERCLA) activities. His experience includes 18 years of environmental consulting for the Department of Energy and other government, utility, or industrial clients; 8 years of commercial nuclear power chemistry and health physics; 5 years of design engineering, research and development, construction, and project management for the alternate energy industry; 1 year of computer programming and systems analysis for business and engineering customers; 2 years teaching and educational institution management.

PROJECT EXPERIENCE:

Technical Manager; Tetra Tech NUS; Aiken, South Carolina; 1997 - Present. As Technical Manager, Mr. Connor is responsible for ensuring the quality of technical products, overseeing project managers, and developing business opportunities in critical market sectors. In this position, Mr. Connor is responsible for the success of all the projects worked from the Aiken, South Carolina office, annually worth millions of dollars.

Project Manager; Tetra Tech NUS; Aiken, South Carolina; 1993 – Present. Concurrent with the position as Technical Manager, Mr. Connor manages some projects directly.

- Project Manager for SCE&G COL Application, Tetra Tech NUS, Aiken, South Carolina; 2006 – 2007: Mr. Connor was responsible for preparation of the Environmental Report, which was to be submitted as part of the combined construction and operating license application for two new AP1000 reactors at the V. C. Summer plant. This 2-million dollar project required careful budget and schedule controls in an environment that demanded the highest standards of quality. Special challenges involved working in an environment of continuously changing standards from the nuclear Regulatory Commission.
- Project Manager for Exelon Texas COL Application, Tetra Tech NUS, Aiken, South Carolina; 2007 – 2008: Mr. Connor is responsible for preparation of the Environmental Report, which is to be submitted as part of the combined construction and operating license application for two new ESBWR reactors at a greenfield site in south Texas. This 3-million dollar project required careful budget and schedule controls in an

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environment that demanded the highest standards of quality. Special challenges involve a large amount of field work to characterize the site for terrestrial ecology, aquatic ecology, wetlands, water quality, and cultural resources.

- *License renewal of commercial nuclear power plants.* Mr. Connor serves as the Project Manager for the license renewal of commercial nuclear power plants such as the Palo Verde Nuclear Generating Station, Wolf Creek Generating Station, Quad Cities Nuclear Power Station and the D. C. Cook Nuclear Plant. These projects involve collecting data on environmental characteristics and plant systems, analyzing the impacts of license renewal on the environment and the local economy, and preparing an Environmental Report that will be used by the Nuclear Regulatory Commission in its license renewal decision. The Project Manager is required to be cognizant of issues ranging from ecology to socioeconomics to accident analysis.
- *EIS on high-level waste management at the Idaho National Engineering and Environmental Laboratory; DOE-INEEL.* Mr. Connor served as the project manager of a 5 million dollar environmental impact statement (EIS) on high-level waste management at the Idaho National Engineering and Environmental Laboratory (INEEL). This EIS examined the environmental consequences of treating 4,200 cubic meters of calcined high-level waste and 1.4 million gallons of liquid mixed transuranic waste. The EIS also evaluates the disposition of the existing and proposed high-level waste facilities, including those designed for low-activity waste fraction disposal. As a consequence of the waste disposal and facility disposition aspects of this EIS, the analysis included long term modeling of radiological impacts over 10,000 years. The Idaho High-Level Waste and Facilities Disposition EIS won national and international awards from the Society for Technical Communication.
- *Closure of the first high-level waste tanks to be closed within the DOE complex; DOE-SR.* Mr. Connor led a diverse team of environmental scientists assisting the U.S. Department of Energy Savannah River Operations Office (DOE-SR) in the closure of the first high-level waste tanks to be closed within the DOE complex. His activities include devising the regulatory strategy, writing a general closure plan covering all 51 tanks, writing tank-specific closure modules, modeling the impacts from various closure scenarios such as waste removal regimes and residual waste stabilization techniques, and writing a comprehensive document establishing DOE-SR's regulatory position that the waste residual is not subject to Nuclear Regulatory Commission (NRC) licensing as high-level waste. This groundbreaking work has received praise from DOE and is expected to form the basis for tank closures at other DOE sites. Mr. Connor was also Deputy Project Manager for the Savannah River Site (SRS) HLW Tank Closure EIS that provided the NEPA coverage for the tank closures.
- *Spent nuclear fuel programmatic EIS (INEL), high-level waste management EIS (SRS), renovation of the ventilation system at 2 large chemical separations facilities (SRS).* Mr. Connor managed the development of an EIS at the Idaho National Engineering and Environmental Laboratory (the spent nuclear fuel programmatic EIS) and was deputy project manager for two EISs at the Savannah River Site (SRS) (high-level waste management EIS and an renovation of the ventilation system at 2 large

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chemical separations facilities). The INEEL project required managing a staff of approximately 20 professionals over 1 1/2 years. He received a certificate of appreciation from DOE, which stated he delivered his products early and his contribution was one of the technically strongest of the overall project. In addition, he authored an environmental assessment for DOE-SR for storing plutonium metal at SRS.

Analyst for Early Site Permit environmental report; Tetra Tech NUS, Aiken, South Carolina; 2005: For the Southern Nuclear ESP ER, Mr. Connor was the analyst for severe accidents, transmission lines, health and safety, heat dissipation to the atmosphere from cooling towers.

Radiological Risk Assessor; Tetra Tech NUS; Aiken South Carolina; 1990- Present. Mr. Connor performs human health and ecological risk assessments for NEPA documents, CERCLA documents, and nuclear power plant licensing documents. Currently, Mr. Connor is using RESRAD, RESRAD-BIOTA for CERCLA closures and MACCS2 for nuclear power plant license renewals and combined construction and operations licenses.

Radiological Transportation Analyst; Tetra Tech NUS; Aiken, South Carolina; 1993 – Present. Mr. Connor assists the Department of Energy in planning large nuclear projects, many of which involve transportation of radiological materials. Accordingly, he models radiological transportation to provide collective dose to the general population and to workers and the probabilistic risk of accidents. Mr. Connor uses the routing codes HIGHWAY, INTERLINE, and TRAGIS and the consequence codes RADTRAN and RISKIND. Materials modeled include plutonium metal and oxides, uranium metal and oxides, low-level waste, transuranic waste, high-level waste, spent nuclear fuel, and other materials. Some recent Environmental Impact Statements supported with radiological transportation analysis include:

- Yucca Mountain Repository EIS
- Idaho National Engineering and Environmental Laboratory High-Level Waste EIS
- Lawrence Livermore Sitewide EIS
- Modern Pit Facility EIS.
- EIS for Decontamination and Decommissioning of the Sequoyah Fuels Corporation Facility in Gore, OK
- Sandia National Laboratories/California Sitewide Environmental Assessment
- Omega West Reactor Environmental Assessment (LANL)
- Nevada Test Site Supplement Analysis

Transmission Line Analyst; Tetra Tech NUS; Aiken, South Carolina; 1998 – Present. Mr. Connor calculates the current induced in vehicles parked beneath electrical transmission lines as part of the license renewal application of nuclear power plants. He identifies locations of potential interest from the Plan and Profile drawings of the transmission lines and models these locations using the Electric Power Research Institute code, ACDCLINE. The results are

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compared to standards in the National Electrical Safety Code and then reported in the plant's Environmental Report. These analyses have been performed for the following nuclear plants: North Anna Nuclear Power Station, Surry Nuclear Power Station, Farley Nuclear Plant, Point Beach Nuclear Plant, Quad Cities Nuclear Power Station, Dresden Nuclear Power Station, Brunswick Steam Electric Plant, Robinson Nuclear Plant, Pilgrim Nuclear Power Station, Crystal River, Susquehanna Steam Electric Station, Shearon Harris Nuclear Plant.

Radiological Training Specialist; Tetra Tech NUS; Aiken, South Carolina; 2003 – Present.

Mr. Connor prepares and delivers training courses to EPA and other state, federal, and local agencies on nuclear physics, radiation protection, instrumentation, radiological work controls, and emergency response. Of particular interest is the MARSSIM (Multi-Agency Radiation and Site Investigation Manual) training Mr. Connor provides that assists site owners and regulators to deal with the complex scientific problems of determining when a radiologically contaminated site is ready for unrestricted release.

Tetra Tech NUS (then Halliburton NUS); Manager of Environmental Radiation Department; Aiken, South Carolina; 1993 – 1995. Mr. Connor provided, through a staff of approximately 12 health physicists, environmental radiation protection and environmental management support to the DOE, the U.S. Department of Defense, the U.S. Environmental Protection Agency (EPA), industrial, and utility clients. His departmental activities included radiological transportation risk assessments; field assessments of environmental radiation protection activities against Federal and state regulations and industry standards; human health and ecological risk assessments in support of NRC, RCRA, CERCLA, and NEPA requirements; environmental radiation protection programs such as Environmental Monitoring Plans and ALARA programs; and regulatory impact analyses.

Tetra Tech NUS (then Halliburton NUS); Environmental Health Physicist; Aiken, South Carolina; 1990 – 1993.

Environmental Health Physicist; Various Projects; DOE; 1990-1993. Mr. Connor performed field evaluations of radiation and environmental protection programs at DOE sites including SRS in Aiken, SC; Sandia National Laboratories in Albuquerque, NM; and the Paducah Gaseous Diffusion Plant in Paducah, KY. Projects have included serving as team leader for surveillances of an airborne dose assessment methodology, computer codes, and software QA; a reactor liquid effluent program; QA of an environmental laboratory; software QA of monitoring program data management software; a surface water sampling program; an Investigation-Derived Waste program; and petroleum-contaminated media program. Other projects included assisting with functional appraisals of an internal dosimetry program especially the bioassay laboratory and radiation protection training. He has served as lead radiological effluent inspector for assessing the status and plan for placing the SRS P-Reactor into standby condition. These projects required project planning and writing skills; knowledge of DOE and EPA requirements and national consensus standards for effluent monitoring, environmental surveillance, software QA, and training; general familiarity with engineering and operational practice in large nuclear and chemical plants; and interpersonal skills for interviewing.

Mr. Connor performed dose and risk assessments in support of client regulatory needs. He provided technical support for radiological risk assessments at several RCRA/CERCLA disposal

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sites. He provided technical review for an ecological risk assessment for the Fernald Environmental Management Project, a waste disposal options study, and a benchscale treatability study and radiological waste disposal options for Gulf States Utility, a commercial nuclear utility. He continues to perform varied radiological impact analyses for NEPA projects, including several radiological transportation risk assessments.

Mr. Connor performed technical reviews of program plans, QA plans, compliance plans, procedures, design documents such as conceptual design reviews and safety analysis reports, environmental reports, NEPA documents, RCRA Facility Investigations and Remedial Investigations Work Plans, CERCLA baseline risk assessments, and similar documents at the Savannah River Site. The reviews require a broad technical knowledge base which includes familiarity with DOE Orders, EPA regulations, DOE and EPA technical guidance, national consensus standards, nuclear physics, health physics, chemistry, and mathematics.

CHRONOLOGICAL WORK HISTORY:

Tetra Tech NUS; Aiken, South Carolina; 1990 - Present.

Senior Plant Chemist; Georgia Power Co.; Waynesboro, Georgia; 1984 - 1990. Mr. Connor ensured the digital radiation monitoring system at a 2-unit commercial nuclear power plant performed to meet technical specification and design requirements. Activities included writing procedures for calibration and operation; directing and supporting the calibration specialists; supporting the operating technicians; developing bases for operational modes; calculating operating parameters; troubleshooting electronics, detector, and computer problems; supporting maintenance technicians; expediting maintenance by interacting with plant management and work controls staff; responding to the NRC on regulatory issues; performing as a subject matter expert for the training department; and investigating off-normal plant events by evaluating the system data. Special projects in this capacity often involved supervising from 2 to 8 professionals. Within 2 years of assuming responsibility for the system, the reliability and availability of the system improved from about 20% to about 90% (slightly higher than the industry average of 80%).

Mr. Connor provided support to the gamma spectroscopy systems at Plant Vogtle, a 2-unit commercial nuclear power plant. His tasks included calibration, QA, troubleshooting, software maintenance, and investigation of analytical result anomalies for a 7-detector intrinsic germanium system. He wrote an entire new set of procedures for a more efficient calibration, more effective quality control, and more reliable and technically justified operation. After 3 months of careful investigation, he solved a subtle performance problem not seen before in the industry and presented a paper on the results.

Mr. Connor provided support to the chemistry department at Plant Vogtle, a 2-unit commercial nuclear power plant. A major project was the removal of heavy oil contamination from the jacket cooling water system of the plant standby diesel generator. This project required designing the methodology, selecting appropriate chemicals, acquiring materials and services, developing acceptance tests and criteria, writing procedures, and coordinating the work while conforming to extremely stringent schedule demands of a plant outage. It also required meeting the work and procurement controls required for a safety system and complying with all environmental

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requirements. Other projects included backup support to the effluent management program which involved serving as database administrator of an INGRES system, solving effluent release permitting problems, and preparing semiannual effluent reports. Additionally, he evaluated plant conditions from analytical chemistry results, participated as an offsite dose analyst for emergency exercises, served as controller/evaluator for emergency exercises, and performed troubleshooting of the post accident sampling system.

As a Senior Training Specialist, Mr. Connor developed courses and materials and taught courses and laboratory sessions for chemistry, health physics, and emergency planning at Plant Vogtle. He led a team of 4 to 6 chemistry instructors, instructional technologists and supporting personnel for the analysis, design, and development of the chemistry training program with the goal of being accredited by the Institute of Nuclear Power Operations (INPO). He managed the chemistry accreditation effort from inception through the INPO evaluation visit. Accreditation was achieved very shortly after he was transferred from training duties. Representative courses developed and taught were mathematics, nuclear physics, general chemistry, laboratory quality control, pressurized water reactor (PWR) systems, mitigating core damage, offsite dose assessment, PWR chemistry, atomic absorption spectrophotometry, ion chromatography, sewage treatment, gamma spectroscopy, and counting statistics.

Instructor; South Georgia College, Baxley, Georgia; 1982 - 1984. Mr. Connor developed courses and materials and taught courses and laboratory sessions for chemistry, health physics, and emergency planning at Plant Hatch, a commercial nuclear power plant operated by Georgia Power Company. He managed a college degree program at the plant by recruiting students, facilitating registration, advising students, and teaching courses onsite. Representative training courses developed and taught were mathematics, nuclear physics, boiling water reactor chemistry, post accident sampling, and offsite dose assessment. He also taught college courses in mathematics and chemistry laboratory.

Chief Engineer; United Farm Tools; Fitzgerald, Georgia; 1979 - 1982. Mr. Connor designed and tested alternate energy and farm products and managed a warranty repair program for a farm equipment manufacturer. He designed an automated, farm-sized alcohol fuel plant which included electronic design to control flows, temperatures, acidity, and chemical additions; chemical engineering design of distillation column and other unit processes; mechanical design of tanks, agitators, pumps, heating elements, and valves; and fabrication design for prototype construction. He also designed an automated, wood-fired boiler for drying crops. The boiler automatically fed logs to the firebox and fed hot water to the heat exchangers according to established requirements. He designed the electrical control and water flow portions of a center pivot irrigation machine. Projects involved supervising 1-5 professionals and skilled laborers, determining suppliers of parts, and meeting budget requirements. His intensive project management skills were required to produce products on time and within budget.

Programmer and System Analyst; Custom Programming, Inc.; Fitzgerald, Georgia; 1978 - 1979. Mr. Connor designed and wrote computer software for business and engineering customers. Programs were written for small personal computers which were innovative technology at the time and for minicomputers. Languages included BASIC and assembly level language. Activities included traveling to client locations, determining business operations and computer needs, developing, testing, and installing software, and training customers.

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Founder and President; Eco-Tek, Inc.; Fitzgerald, Georgia; 1977 - 1978. Mr. Connor provided design and installation of energy conservation products, especially solar energy products. He designed and constructed one of the largest single-family, residential solar heating systems in the country. Activities included general company management which included 3 employees plus varying numbers of subcontractors, project management, design engineering, marketing, and financing. Marketing activities included promotion of solar energy using Sun Day which resulted in several television appearances. He was active in the Solar Energy Industries Association. He was also recognized by *Who's Who in Finance and Industry* as a leader in the new solar industry.

Assistant Principal; Stonecave Institute; Dunlap, Tennessee; 1974 - 1976. Mr. Connor was an Assistant Principal of a 400-acre school and farm. In this capacity, he taught high school level courses in mathematics, science, and maintenance. He assisted in the management of the farm and school that had about 50 boarding students from around the world and about 20 faculty members. He also conducted nuclear, geophysical research associated with Oak Ridge National Laboratory using students as laboratory technicians.